

N/A

CRF Errors Corrected by the STIC Systems Branch

1642

Serial Number: 09/121,587

CRF Processing Date: 4/12/99
Edited by: AV (STIC staff)
Verified by: AV

#13

ENTERED

RECEIVED
APR 18 2000
1600 MAIL ROOM

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted **ending** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☒ Other: Seq 19 - moved nucleic end labels over to left

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

RECEIVED
APR 18 2000
TC 1600 MAIL ROOM

1 <110> APPLICANT: Chambers, Thomas J.
2 Guirakhoo, Farshad
3 Monath, Thomas P.
4 <120> TITLE OF INVENTION: CHIMERIC FLAVIVIRUS VACCINES
5 <130> FILE REFERENCE: 06132/033003
6 <140> CURRENT APPLICATION NUMBER: US/09/121,587
7 <141> CURRENT FILING DATE: 1998-07-23
8 <150> EARLIER APPLICATION NUMBER: 08/807,445
9 <151> EARLIER FILING DATE: 1997-02-28
10 <150> EARLIER APPLICATION NUMBER: 09/007,664
11 <151> EARLIER FILING DATE: 1998-01-15
12 <160> NUMBER OF SEQ ID NOS: 20
13 <170> SOFTWARE: FastSEQ for Windows Version 3.0
14 <210> SEQ ID NO 1
15 <211> LENGTH: 21
16 <212> TYPE: DNA
17 <213> ORGANISM: Artificial Sequence
18 <220> FEATURE:
19 <223> OTHER INFORMATION: Derived from Yellow Fever virus and West Nile
20 virus
21 <400> SEQUENCE: 1 21
22 cactgggaga gcttgaaggt c
23 <210> SEQ ID NO 2
24 <211> LENGTH: 25
25 <212> TYPE: DNA
26 <213> ORGANISM: Artificial Sequence
27 <220> FEATURE:
28 <223> OTHER INFORMATION: Derived from Yellow Fever virus and West Nile
29 virus
30 <400> SEQUENCE: 2 25
31 aaagccagtt gcagccgcgg tttaa
32 <210> SEQ ID NO 3
33 <211> LENGTH: 21
34 <212> TYPE: DNA
35 <213> ORGANISM: Artificial Sequence
36 <220> FEATURE:
37 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-1 virus
38 <400> SEQUENCE: 3
39 aaggtagact ggtgggctcc c 21
40 <210> SEQ ID NO 4
41 <211> LENGTH: 26
42 <212> TYPE: DNA
43 <213> ORGANISM: Artificial Sequence
44 <220> FEATURE:

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

45 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-1 virus
46 <400> SEQUENCE: 4
47 gatcctcagt accaaccgcg gtttaa 26
48 <210> SEQ ID NO 5
49 <211> LENGTH: 21
50 <212> TYPE: DNA
51 <213> ORGANISM: Artificial Sequence
52 <220> FEATURE:
53 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-2 virus
54 <400> SEQUENCE: 5
55 aaggtagatt ggtgtgcatt g 21
56 <210> SEQ ID NO 6
57 <211> LENGTH: 26
58 <212> TYPE: DNA
59 <213> ORGANISM: Artificial Sequence
60 <220> FEATURE:
61 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-2 virus
62 <400> SEQUENCE: 6
63 aaccctcagt accacccgcg gtttaa 26
64 <210> SEQ ID NO 7
65 <211> LENGTH: 21
66 <212> TYPE: DNA
67 <213> ORGANISM: Artificial Sequence
68 <220> FEATURE:
69 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-3 virus
70 <400> SEQUENCE: 7
71 aaggtgaatt gaagtgtct a 21
72 <210> SEQ ID NO 8
73 <211> LENGTH: 25
74 <212> TYPE: DNA
75 <213> ORGANISM: Artificial Sequence
76 <220> FEATURE:
77 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-3 virus
78 <400> SEQUENCE: 8
79 acccccagca ccacccgcg tttaa 25
80 <210> SEQ ID NO 9
81 <211> LENGTH: 21
82 <212> TYPE: DNA
83 <213> ORGANISM: Artificial Sequence
84 <220> FEATURE:
85 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-4 virus
86 <400> SEQUENCE: 9
87 aaaaggaaca gttgttctct a 21
88 <210> SEQ ID NO 10
89 <211> LENGTH: 25
90 <212> TYPE: DNA
91 <213> ORGANISM: Artificial Sequence
92 <220> FEATURE:
93 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Dengue-4 virus
94 <400> SEQUENCE: 10

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

95	accggaagtg tcaaccgcgg tttaa	25
96	<210> SEQ ID NO 11	
97	<211> LENGTH: 21	
98	<212> TYPE: DNA	
99	<213> ORGANISM: Artificial Sequence	
100	<220> FEATURE:	
101	<223> OTHER INFORMATION: Derived from Yellow Fever virus and St. Louis	
102	Encephalitis virus	
103	<400> SEQUENCE: 11	
104	aacgtgaata gttgatagt c	21
105	<210> SEQ ID NO 12	
106	<211> LENGTH: 25	
107	<212> TYPE: DNA	
108	<213> ORGANISM: Artificial Sequence	
109	<220> FEATURE:	
110	<223> OTHER INFORMATION: Derived from Yellow Fever virus and St. Louis	
111	Encephalitis virus	
112	<400> SEQUENCE: 12	
113	accgttggtc gcacccgcgg tttaa	25
114	<210> SEQ ID NO 13	
115	<211> LENGTH: 21	
116	<212> TYPE: DNA	
117	<213> ORGANISM: Artificial Sequence	
118	<220> FEATURE:	
119	<223> OTHER INFORMATION: Derived from Yellow Fever virus and Murray Valley	
120	Encephalitis virus	
121	<400> SEQUENCE: 13	
122	aatttcgaaa ggtggaaggt c	21
123	<210> SEQ ID NO 14	
124	<211> LENGTH: 26	
125	<212> TYPE: DNA	
126	<213> ORGANISM: Artificial Sequence	
127	<220> FEATURE:	
128	<223> OTHER INFORMATION: Derived from Yellow Fever virus and Murray Valley	
129	Encephalitis virus	
130	<400> SEQUENCE: 14	
131	gaccggtgtt tacagccgcg gtttaa	26
132	<210> SEQ ID NO 15	
133	<211> LENGTH: 21	
134	<212> TYPE: DNA	
135	<213> ORGANISM: Artificial Sequence	
136	<220> FEATURE:	
137	<223> OTHER INFORMATION: Derived from Yellow Fever virus and Tick-Borne	
138	Encephalitis virus	
139	<400> SEQUENCE: 15	
140	tactgcgaac gacgttgcca c	21
141	<210> SEQ ID NO 16	
142	<211> LENGTH: 25	
143	<212> TYPE: DNA	
144	<213> ORGANISM: Artificial Sequence	

PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

```

145 <220> FEATURE:
146 <223> OTHER INFORMATION: Derived from Yellow Fever virus and Tick-Borne
147 Encephalitis virus
148 <400> SEQUENCE: 16
149 actgggaacc tcacccgcgg tttaa 25
150 <210> SEQ ID NO 17
151 <211> LENGTH: 1983
152 <212> TYPE: DNA
153 <213> ORGANISM: Dengue-2 virus
154 <220> FEATURE:
155 <221> NAME/KEY: CDS
156 <222> LOCATION: (1)...(1983)
157 <400> SEQUENCE: 17
158 ttc cat cta acc aca cgt aac gga gaa cca cac atg atc gtc agt aga 48
159 Phe His Leu Thr Thr Arg Asn Gly Glu Pro His Met Ile Val Ser Arg
160 1 5 10 15
161 caa gag aaa ggg aaa agt ctt ttg ttt aaa aca gag gat ggc gtg aac 96
162 Gln Glu Lys Gly Lys Ser Leu Leu Phe Lys Thr Glu Asp Gly Val Asn
163 20 25 30
164 atg tgc acc ctc atg gcc atg gac ctt ggt gaa ttg tgt gaa gac aca 144
165 Met Cys Thr Leu Met Ala Met Asp Leu Gly Glu Leu Cys Glu Asp Thr
166 35 40 45
167 atc acg tac aag tgt ccc ctt ctc agg cag aat gag cca gaa gac ata 192
168 Ile Thr Tyr Lys Cys Pro Leu Leu Arg Gln Asn Glu Pro Glu Asp Ile
169 50 55 60
170 gac tgc tgg tgc aac tcc acg tcc acg tgg gta acc tat ggg act tgt 240
171 Asp Cys Trp Cys Asn Ser Thr Ser Thr Trp Val Thr Tyr Gly Thr Cys
172 65 70 75 80
173 acc acc acg gga gaa cat aga aga gaa aaa aga tca gtg gca ctc gtt 288
174 Thr Thr Thr Gly Glu His Arg Arg Glu Lys Arg Ser Val Ala Leu Val
175 85 90 95
176 cca cat gtg gga atg gga ctg gag acg cga act gaa aca tgg atg tca 336
177 Pro His Val Gly Met Gly Leu Glu Thr Arg Thr Glu Thr Trp Met Ser
178 100 105 110
179 tca gaa ggg gct tgg aaa cat gcc cag aga att gaa att tgg atc ctg 384
180 Ser Glu Gly Ala Trp Lys His Ala Gln Arg Ile Glu Ile Trp Ile Leu
181 115 120 125
182 aga cat cca ggc ttc acc ata atg gca gca atc ctg gca tac acc ata 432
183 Arg His Pro Gly Phe Thr Ile Met Ala Ala Ile Leu Ala Tyr Thr Ile
184 130 135 140
185 ggg acg aca cat ttc cag aga gca ctg att ttc atc tta ctg aca gct 480
186 Gly Thr Thr His Phe Gln Arg Ala Leu Ile Phe Ile Leu Leu Thr Ala
187 145 150 155 160
188 gtc gct cct tca atg aca atg cgt tgc ata gga ata tca aat aga gac 528
189 Val Ala Pro Ser Met Thr Met Arg Cys Ile Gly Ile Ser Asn Arg Asp
190 165 170 175
191 ttt gta gaa ggg gtt tca gga gga agc tgg gtt gac ata gtc tta gaa 576
192 Phe Val Glu Gly Val Ser Gly Gly Ser Trp Val Asp Ile Val Leu Glu
193 180 185 190
194 cat gga agc tgt gtg acg acg atg gca aaa aac aaa cca aca ttg gat 624

```

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

195	His Gly Ser Cys Val Thr Thr Met Ala Lys Asn Lys Pro Thr Leu Asp	
196	195 200 205	
197	ttt gaa ctg ata aaa aca gaa gcc aaa cag cct gcc acc cta agg aag	672
198	Phe Glu Leu Ile Lys Thr Glu Ala Lys Gln Pro Ala Thr Leu Arg Lys	
199	210 215 220	
200	tac tgt ata gag gca aag cta acc aac aca aca aca gaa tct cgt tgc	720
201	Tyr Cys Ile Glu Ala Lys Leu Thr Asn Thr Thr Thr Glu Ser Arg Cys	
202	225 230 235 240	
203	cca aca caa ggg gaa ccc agc cta aat gaa gag cag gat aaa agg ttc	768
204	Pro Thr Gln Gly Glu Pro Ser Leu Asn Glu Glu Gln Asp Lys Arg Phe	
205	245 250 255	
206	gtc tgc aaa cac tcc atg gta gac aga gga tgg gga aat gga tgt gga	816
207	Val Cys Lys His Ser Met Val Asp Arg Gly Trp Gly Asn Gly Cys Gly	
208	260 265 270	
209	tta ttt gga aag gga ggc att gtg acc tgt gct atg ttc aca tgc aaa	864
210	Leu Phe Gly Lys Gly Gly Ile Val Thr Cys Ala Met Phe Thr Cys Lys	
211	275 280 285	
212	aag aac atg gag gga aaa gtt gtg cag cca gaa aac ttg gaa tac acc	912
213	Lys Asn Met Glu Gly Lys Val Val Gln Pro Glu Asn Leu Glu Tyr Thr	
214	290 295 300	
215	att gtg gta aca ccc cac tca ggg gaa gag cat gcg gtc gga aat gac	960
216	Ile Val Val Thr Pro His Ser Gly Glu Glu His Ala Val Gly Asn Asp	
217	305 310 315 320	
218	aca gga aaa cat ggc aag gaa atc aaa gta aca cca cag agt tcc atc	1008
219	Thr Gly Lys His Gly Lys Glu Ile Lys Val Thr Pro Gln Ser Ser Ile	
220	325 330 335	
221	aca gaa gca gaa ttg aca ggt tat ggc act gtc acg atg gag tgc tct	1056
222	Thr Glu Ala Glu Leu Thr Gly Tyr Gly Thr Val Thr Met Glu Cys Ser	
223	340 345 350	
224	ccg aga aca ggc ctc gac ttc aat gag atg gtg ttg ctg cag atg gaa	1104
225	Pro Arg Thr Gly Leu Asp Phe Asn Glu Met Val Leu Leu Gln Met Glu	
226	355 360 365	
227	aat aaa gct tgg ctg gtg cat agg caa tgg ttc cta gac ctg ccg tta	1152
228	Asn Lys Ala Trp Leu Val His Arg Gln Trp Phe Leu Asp Leu Pro Leu	
229	370 375 380	
230	cca tgg ctg ccc gga gcg gac aca caa ggg tca aat tgg ata caa aaa	1200
231	Pro Trp Leu Pro Gly Ala Asp Thr Gln Gly Ser Asn Trp Ile Gln Lys	
232	385 390 395 400	
233	gaa aca ttg gtc act ttc aaa aat cct cat gcg aag aaa cag gat gtt	1248
234	Glu Thr Leu Val Thr Phe Lys Asn Pro His Ala Lys Lys Gln Asp Val	
235	405 410 415	
236	gtt gtt tta gga tcc caa gaa ggg gcc atg cac aca gca ctc aca ggg	1296
237	Val Val Leu Gly Ser Gln Glu Gly Ala Met His Thr Ala Leu Thr Gly	
238	420 425 430	
239	gcc aca gaa atc caa atg tca tca gga aac tta ctc ttc aca gga cat	1344
240	Ala Thr Glu Ile Gln Met Ser Ser Gly Asn Leu Leu Phe Thr Gly His	
241	435 440 445	
242	ctc aag tgc agg ctg aga atg gac aag cta cag ctc aaa gga atg tca	1392
243	Leu Lys Cys Arg Leu Arg Met Asp Lys Leu Gln Leu Lys Gly Met Ser	
244	450 455 460	

PAGE: 6

VERIFICATION SUMMARY
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999

TIME: 12:11:50

Input Set: I121587.RAW

Line ? Error/Warning

Original Text

[illegible]

48	tagaagtgaa	gagagaagct	tgcccagggg	ctagcgtgat	cattgatggc	aactgtgatg	2400
49	gacggggaaa	atcaaccaga	tccaccacgg	atagcgggaa	agttattcct	gaatgggtgtt	2460
50	gccgctcctg	cacaatgccg	cctgtgagct	tccatggtag	tgatgggtgt	tggtatccca	2520

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

51	tggaattag	gccaaggaaa	acgcatgaaa	gccatctggt	gcgctcctgg	gttacagctg	2580
52	gagaaataca	tgctgtccct	tttggtttgg	tgagcatgat	gatagcaatg	gaagtgggtcc	2640
53	taaggaaaag	acagggacca	aagcaaatgt	tggttggagg	agtagtgctc	ttgggagcaa	2700
54	tgctggctcg	gcaagtaact	ctccttgatt	tgctgaaact	cacagtggct	gtgggattgc	2760
55	atttccatga	gatgaacaat	ggaggagacg	ccatgtatat	ggcggttgatt	gctgcctttt	2820
56	caatcagacc	agggctgctc	atcggttttg	ggctcaggac	cctatggagc	cctcgggaaac	2880
57	gccttgtgct	gaccctagga	gcagccatgg	tggagattgc	cttgggtggc	gtgatgggcg	2940
58	gcctgtggaa	gtatctaaat	gcagtttctc	tctgcatact	gacaataaat	gctgttgctt	3000
59	ctaggaaaag	atcaaatacc	atcttgcccc	tcatggctct	gttgacacct	gtcactatgg	3060
60	ctgaggtgag	acttgccgca	atgttctttt	gtgccaatgg	tatcataggg	gtccttcacc	3120
61	agaatttcaa	ggacacctcc	atgcagaaga	ctataacctc	ggtggccctc	acactcacat	3180
62	cttacctggg	cttgacacaa	ccttttttgg	gcctgtgtgc	atttctggca	acccgcataat	3240
63	ttgggcgaag	gagtatccca	gtgaatgagg	cactcgcagc	agctgggtcta	gtgggagtgc	3300
64	tggcaggact	ggcttttcag	gagatggaga	acttccttgg	tccgattgca	gttggaggac	3360
65	tctgatgat	gctggttagc	gtggctggga	gggtggatgg	gctagagctc	aagaagcttg	3420
66	gtgaagtttc	atgggaagag	gaggcggaga	tcagcgggag	ttccgcccgc	tatgatgtgg	3480
67	cactcagtga	acaaggggag	ttcaagctgc	tttctgaaga	gaaagtgccca	tgggaccagg	3540
68	ttgtgatgac	ctcgctggcc	ttggttgggg	ctgccctcca	tccatttgct	cttctgctgg	3600
69	tccttgctgg	gtggctgttt	catgtcaggg	gagctaggag	aagtggggat	gtccttggtgg	3660
70	atattcccac	tcctaagatc	atcgaggaaat	gtgaacatct	ggaggatggg	atttatggca	3720
71	tattccagtc	aaccttcttg	ggggcctccc	agcgaggagt	gggagtggca	cagggaaggg	3780
72	tgttccacac	aatgtggcat	gtcacaagag	gagctttcct	tgtcaggaat	ggcaagaagt	3840
73	tgattccatc	ttgggcttca	gtaaaggaaag	accttgtgcg	ctatggtggc	tcatggaaat	3900
74	tggaaaggcag	atgggatgga	gaggaaagagg	tccagttgat	cgcggtgtgt	ccaggaaaaga	3960
75	acgtggtcaa	cgtccagaca	aaaccgagct	tgttcaaagt	gaggaatggg	ggagaaaatcg	4020
76	gggctgtcgc	tcttgactat	ccgagtggca	cttcaggatc	tcctattgtt	aacaggaacg	4080
77	gagaggtgat	tgggctgtac	ggcaatggca	tccttgtcgg	tgacaactcc	ttcgtgtccg	4140
78	ccatatccca	gactgagggt	aaggaaagaag	gaaaggagga	gctccaagag	atcccgacaa	4200
79	tgctaaaagaa	aggaatgaca	actgtccttg	attttcatcc	tggagctggg	aagacaagac	4260
80	gtttcctccc	acagatcttg	gccgagtgcg	cacggagacg	cttgcgcact	cttgtgttgg	4320
81	ccccaccag	ggttgttctt	tctgaaatga	aggaggcttt	tcacggcctg	gacgtgaaat	4380
82	tccacacaca	ggctttttcc	gctcacggca	gcgggagaga	agtcattgat	gccatgtgcc	4440
83	atgccaccct	aacttacagg	atgttggaac	caactagggt	tgtaactgg	gaagtgatca	4500
84	ttatggatga	agcccatttt	ttggatccag	ctagcatagc	cgctagaggt	tgggcagcgc	4560
85	acagagctag	ggcaaatgaa	agtgaacaaa	tcttgatgac	agccacaccg	cctgggacta	4620
86	gtgatgaatt	tccacattca	aatggtgaaa	tagaagatgt	tcaaacggac	ataccagtg	4680
87	agccctggaa	cacagggcat	gactggatcc	tggctgacaa	aaggcccacg	gcatggttcc	4740
88	ttccatccat	cagagctgca	aatgtcatgg	ctgcctcttt	gcgtaaggct	ggaaagagtg	4800
89	tgggtgtcct	gaacaggaaa	acctttgaga	gagaataccc	cacgataaag	cagaagaaac	4860
90	ctgactttat	attggccact	gacatagctg	aaatgggagc	caacctttgc	gtggagcgag	4920
91	tgctggattg	caggacggct	tttaagcctg	tgcttgtgga	tgaaggagg	aagggtggcaa	4980
92	taaaagggcc	acttcgtatc	tccgcatact	ctgctgtcga	aaggaggggg	cgcatgtggga	5040
93	gaaatcccaa	cagagatgga	gactcatact	actattctga	gcctacaagt	gaaaataatg	5100
94	cccaccacgt	ctgctgggtg	gaggcctcaa	tgtcttggga	caacatggag	gtgaggggtg	5160
95	gaatggtcgc	cccactctat	ggcgttgaag	gaactaaaac	accagtttcc	cctggtgaaa	5220
96	tgagactgag	ggatgaccag	aggaaagtct	tcagagaact	agtgaggaat	tgtgacctgc	5280
97	ccgtttggct	ttcgtggcaa	gtggccaagg	ctggtttgaa	gacgaatgat	cgtaagtggg	5340
98	gttttgaaag	ccctgaggaa	catgagatct	tgaatgacag	cggtgaaaca	gtgaagtgca	5400
99	gggctcctgg	aggagcaaa	aagcctctgc	gcccagggtg	gtgtgatgaa	aggggtgtcat	5460
100	ctgaccagag	tgcgctgtct	gaatttatta	agtttgctga	aggtaggagg	ggagctgctg	5520

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

101	aagtgctagt	tgtgctgagt	gaactccctg	atttccctggc	taaaaaagggt	ggagaggcaa	5580
102	tggataccat	cagtgtgttc	ctccactctg	aggaaggctc	tagggcttac	cgcaatgcac	5640
103	tatcaatgat	gcctgaggca	atgacaatag	tcatgctgtt	tatactggct	ggactactga	5700
104	catcggaat	ggtcatcttt	ttcatgtctc	ccaaaggcat	cagtagaatg	tctatggcga	5760
105	tgggcacaat	ggccggctgt	ggatatctca	tggtcccttg	aggcgtcaaa	cccactcaca	5820
106	tctcctatgt	catgctcata	ttctttgtcc	tgatggtggt	tgtgatcccc	gagccagggc	5880
107	aacaaaggctc	catccaagac	aaccaagtgg	catacctcat	tattggcatc	ctgacgctgg	5940
108	tttcagcggg	ggcagccaac	gagctaggca	tgctggagaa	aaccaaagag	gacctctttg	6000
109	ggaagaagaa	cttaattcca	tctagtgttt	caccctggag	ttggccggat	cttgacctga	6060
110	agccaggagc	tgccctggaca	gtgtacgttg	gcattgttac	aatgctctct	ccaatgttgc	6120
111	accactggat	caaagtcgaa	tatggcaacc	tgtctctgtc	tggaatagcc	cagtcagcct	6180
112	cagtcctttc	tttcatggac	aaggggatac	cattcatgaa	gatgaatatc	tcggtcataa	6240
113	tgctgctggt	cagtggctgg	aattcaataa	cagtgatgcc	tctgctctgt	ggcatagggt	6300
114	gcgcctatgct	ccactgggtct	ctcattttac	ctggaatcaa	agcgcagcag	tcaaagcttg	6360
115	cacagagaag	ggtgttccat	ggcgttgcca	agaaccctgt	ggttgatggg	aatccaacag	6420
116	ttgacattga	ggaagctcct	gaaatgcctg	ccctttatga	gaagaaactg	gctctatatc	6480
117	tccttcttgc	tctcagccta	gcttctgttg	ccatgtgcag	aacgcccttt	tcattggctg	6540
118	aaggcattgt	cctagcatca	gctgccttag	ggccgctcat	agagggaac	accagccttc	6600
119	tttggatgg	acccatggct	gtctccatga	caggagtcac	gagggggaat	cactatgctt	6660
120	ttgtgggagt	catgtacaat	ctatggaaga	tgaaaactgg	acgccggggg	agcgcgaatg	6720
121	gaaaaacttt	gggtgaagtc	tggaagaggg	aactgaatct	gttggaacaag	cgacagtttg	6780
122	agttgtataa	aaggaccgac	attgtggagg	tgatcgtga	tacggcacgc	aggcattttg	6840
123	ccgaaggga	ggtggacacc	gggggtggcg	tctccagggg	gaccgcaaa	ttaagggtgt	6900
124	tccatgagcg	tggctatgtc	aagctggaag	gtagggtgat	tgacctgggg	tgtggccgcg	6960
125	gaggctggtg	ttactacgct	gctgcgcaaa	aggaagtga	tggggtcaaa	ggatttactc	7020
126	ttggaagaga	cggccatgag	aaacccatga	atgtgcaaa	tctgggatgg	aacatcatca	7080
127	ccttcaagga	caaaaactgat	atccaccgcc	tagaaccagt	gaaatgtgac	acccttttgt	7140
128	gtgacattgg	agagtcacat	tcgtcatcgg	tcacagaggg	ggaaaggacc	gtgagagttc	7200
129	ttgatactgt	agaaaaatgg	ctggcttgtg	gggttgacaa	cttctgtgtg	aagggtgttag	7260
130	ctccatacat	gccagatgtt	cttgagaaac	tggaattgct	ccaaaggagg	tttggcggaa	7320
131	cagtgatcag	gaacctctc	tccaggaatt	ccactcatga	aatgtactac	gtgtctggag	7380
132	ccgcagcaa	tgtcacattt	actgtgaacc	aaacatccc	cctcctgatg	aggagaatga	7440
133	ggcgtccaac	tggaaaagt	accctggagg	ctgacgtcat	cctcccaatt	gggacacgca	7500
134	gtgttgagac	agacaaggga	cccctggaca	aagaggccat	agaagaaagg	gttgagagga	7560
135	taaaatctga	gtacatgacc	tcttggtttt	atgacaatga	caacccttac	aggacctggc	7620
136	actactgtgg	ctcctatgtc	acaaaaacct	ccggaagtgc	ggcgagcatg	gtaaatggtg	7680
137	ttattaaaat	tctgacatat	ccatggggaca	ggatagagga	ggtcacaaga	atggcaatga	7740
138	ctgacacaac	cccttttggg	cagcaaagag	tgtttaaaga	aaaagttgac	accagagcaa	7800
139	aggatccacc	agcgggaact	aggaagatca	tgaaagttgt	caacaggtgg	ctgttccgcc	7860
140	acctggccag	agaaaagaac	cccagactgt	gcacaaagga	agaattttatt	gcaaaaagtc	7920
141	gaagtcatgc	agccatttga	gcttacctgg	aagaacaaga	acagtggaa	actgccaatg	7980
142	aggctgtcca	agacccaaag	ttctgggaac	tggtggatga	agaaaggaag	ctgcaccaac	8040
143	aaggcaggtg	tcggacttgt	gtgtacaaca	tgatggggaa	aagagagaag	aagctgtcag	8100
144	agtttgggaa	agcaaaggga	agccgtgcca	tatggtatat	gtggctggga	gcgcggtatc	8160
145	ttgagtttga	ggccctggga	ttcctgaatg	aggaccattg	ggcttccagg	gaaaactcag	8220
146	gaggaggagt	ggaaggcatt	ggcttacaat	acctaggata	tgtgatcaga	gacctggctg	8280
147	caatggatgg	tggtggattc	tacgcggatg	acaccgctgg	atgggacacg	cgcatcacag	8340
148	aggcagacct	tgatgatgaa	caggagatct	tgaactacat	gagcccacat	cacaaaaaac	8400
149	tggcacaagc	agtgatggaa	atgacataca	agaacaaagt	ggtgaaagtg	ttgagaccag	8460
150	ccccaggagg	gaaagcctac	atggatgtca	taagtcgacg	agaccagaga	ggatccgggc	8520

PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

151	aggtagt	gac	ttatg	ctctg	aacaccat	ccaacttg	agtccaattg	atcagaatgg	8580
152	cagaagc	gaga	gatgg	tgata	catcacca	ac	atgttcaaga	ttgtgatgaa	8640
153	ccaggct	gga	ggcat	ggctc	actgagc	acg	gatgtgacag	actgaagagg	8700
154	gtggag	acga	ctgtg	tggtc	cggcccat	c	atgacagg	tt	8760
155	tcaacg	cccat	gtcca	agg	tt	agaaagg	aca	tatctgaatg	8820
156	atgatt	ggga	gaatg	tgccc	ttctgt	tccc	accacttcca	tgaactacag	8880
157	gcaggag	gat	tgtgg	tgcc	gagaa	c	aggacgagct	cattgggaga	8940
158	ctccagg	aaa	cggct	ggatg	atcaagg	aaa	cagcttgcc	cagcaaagcc	9000
159	tgtgg	ctact	gatgt	atttt	cacaaa	agg	acatgagg	ct	9060
160	cagctgt	tcc	cacct	catgg	gttccaca	ag	gacgcacaac	atggctcgatt	9120
161	gggagt	ggat	gaccac	ggaa	gacatg	cctt	agggtg	ggaa	9180
162	accacac	at	gcagg	aca	aatgg	tga	aaaaat	ggag	9240
163	agagaca	aga	caagc	gtgc	ggatc	actga	ttggaat	gac	9300
164	cccacat	cca	tttag	tcatc	catcgt	atcc	gaacgct	gat	9360
165	actac	cta	ag	catgg	ac	aggtatt	ctg	tgga	9420
166	tctgaa	acac	catcta	acag	gaataa	accg	gatacaaa	acc	9480
167	cccaca	ac	gaa	accgga	tataaa	accac	ggctgg	agaa	9540
168	gaaacag	aaa	ccggg	ataaa	aactac	ggat	ggaga	aaccg	9600
169	agaag	ttgtc	agccc	agaa	cccacac	gag	ttttg	ccact	9660
170	aggct	gggac	agccg	ac	caggt	tgca	aaaac	ctgg	9720
171	gagta	aaaa	aag	aacgg	agc	ct	cccac	gt	9780
172	tagag	gttag	aggag	acc	ct	ccagga	aca	aatag	9840
173	gaccg	gag	tg	tctctg	ct	ctccag	agg	ctctg	9900
174	agcag	ac	ttg	atgaca	aa	acc	acttt	ccatc	9960
175	ccacac	atga	tcgtc	agtag	acaag	agaaa	gggaaa	agtc	10020
176	ggcgt	gaaca	tgtgc	acc	ct	catgg	ccatg	gac	10080
177	acgtac	aag	gtccc	ctt	ct	caggc	agaa	gagcc	10140
178	tccac	gtcca	cgtgg	gtaac	ctatg	gg	act	tgtacc	10200
179	aaaag	atcag	tggc	actc	gt	tccac	atgtg	ggaat	10260
180	tggat	gtcat	caga	aggg	gc	ttgga	aat	at	10320
181	catcc	agg	ct	taccata	at	ggcag	caatc	ctggc	10380
182	cagag	agcac	tgatt	ttcat	cttact	gaca	gctgt	cgctc	10440
183	atagga	atat	caaata	gaga	ctttg	tagaa	gggtt	tcag	10500
184	gtctt	agaac	atgga	agctg	tgtg	acgacg	atgg	caaaaa	10560
185	gaact	gataa	aaacag	aagc	caaac	agc	ct	gccacc	10620
186	aagct	aacca	acaca	acaac	agaat	ctc	gt	cccc	10680
187	gaagag	cagg	ataaa	aggtt	cgtct	gcaaa	cactcc	atgg	10740
188	ggatg	tgat	tattt	ggaaa	gggag	gcatt	gtgac	ctgtg	10800
189	aacat	ggagg	gaaa	agttgt	gcagc	agaa	aactt	ggaat	10860
190	cactc	agggg	aagag	catgc	ggtcg	gaaat	gacac	aggaa	10920
191	gtaac	accac	agagt	tccat	cacaga	agca	gaatt	gacag	10980
192	gagt	gctctc	cgaga	acag	cctcg	acttc	aatgag	atgg	11040
193	aaag	cttggc	tgg	tgcatag	gcaat	gg	ctag	ac	11100
194	gcgg	acacac	aagg	gtcaaa	ttgg	atacaa	aaagaa	acat	11160
195	catgc	gaaga	aacag	gatgt	tgtt	gtttta	ggatcc	caag	11220
196	ctcac	agggg	ccacag	aaaat	ccaaa	tg	tca	tcagg	11280
197	aagt	gcaggc	tgaga	aatgga	caag	ctacag	ctcaa	agg	11340
198	ggaa	agttta	aag	ttgtg	aa	aatagca	gaaac	acac	11400
199	gtgc	ag	tatg	aagggg	acg	ctctcc	atgt	aaaat	11460
200	aaaag	acatg	tcttag	gtcg	cctgat	caca	gtca	acccaa	11520

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587DATE: 04/12/1999
TIME: 12:11:50

Input Set: I121587.RAW

201	ccagtcaaca	tagaagcaga	acctccattc	ggagacagct	acatcatcat	aggagtagag	11580
202	ccgggacaac	tgaagctcaa	ctggtttaag	aaaggaagtt	ctatcggcca	aatgtttgag	11640
203	acaacaatga	ggggggcgaa	gagaatggcc	attttgggtg	acacagcctg	ggattttgga	11700
204	tccctgggag	gagtgtttac	atctatagga	aaagccctcc	accaagtctt	tggagcaatc	11760
205	tatggagctg	ccttcagtgg	ggtctcatgg	actatgaaaa	tcctcatagg	agtcattatc	11820
206	acatggatag	gaatgaattc	acgcagcacc	tcactgtctg	tgtcactagt	attggtggga	11880
207	gtcgtgacgc	tgtatttggg	agttatgggtg	ggcgcc			11916

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
TIME: 11:11:44

Input Set: I121587.RAW

This Raw Listing contains the General
Information Section and those Sequences
containing ERRORS.

1 <110> Chambers, Thomas J.
2 Guirakhoo, Farshad
3 Monath, Thomas P.
4 <120> CHIMERIC FLAVIVIRUS VACCINES
5 <130> 06132/033003
6 <140> US/09/121,587
7 <141> 1998-07-23
8 <150> 08/807,445
9 <151> 1997-02-28
10 <150> 09/007,664
11 <151> 1998-01-15
12 <160> 20
13 <170> FastSEQ for Windows Version 3.0

Does Not Comply
Corrected Diskette Needed

ERRORED SEQUENCES FOLLOW

14 <210> 19
E--> 15 <211> 11916
16 <212> DNA
17 <213> Artificial Sequence
18 <220>
19 <223> Derived from Yellow Fever virus and Japanese
20 Encephalitis virus
21 <400> 19
E--> 22 agtaaatcct gtgtgctaata tgagggtgcat tgggtctgcaa atcgagttgc taggcaataa 60acac
W--> 23
E--> 24 c gaggagttcg 180ctccttgtca aacaaaataa aacaaaaaac aaaacaaatt ggaaacagac ct
W--> 25
E--> 26 aacggatgtg gatttttctgg gaagggaagc 360attgacacat gtgcaaaatt ctctgcacc agta
W--> 27
E--> 28 gcgcaagt tggggcgctcc caggcggcaa agtttacagt aacacccaat 540gtccttctgg tagccc
W--> 29 660gtccataggg agtggtttca tgacctcgct ctccccctgga cgtcccccttc gagcacagcg
E--> 30 gcaggagc catcgtggtg 840gagtactcaa gctcagtgat gttaacatca ggccacctga aatgta
W--> 31
E--> 32 acagtt gtcattgaac tctcctactc tgggagtgat 1020ggccccctgca aaattccgat tgtttccg
W--> 33
E--> 34 gaac ccccccttcgg agactcctac atcgtagttg gaaggggaga caagcagatc 1200aaccaccatt
W--> 35
E--> 36 ggaggg 1320gtccttcaact ccataggaag agccgttcac caagtgtttg gtggtgcctt cagaacac
W--> 37
E--> 38 ttag ccacaggagg tgtgctcgtg 1500ttccttagcga ccatgtgggc gccgatcaag gatgcgccat
W--> 39

*more nucleic
acids may be
left*

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999

TIME: 11:11:44

Input Set: I121587.RAW

```

E--> 40      ct gtgaagcttg catcaatagt gaaagcctct tttgaagaag      1680ggaagtgtgg cctaaattca g
E--> 41      0caaagaatgt ttaccagaga ggaactcatc cattttccag aattcgggat ggtctgcagt      1860atg
W--> 42
E--> 43      tc tggaattctt      1980tccagataga ggagtttggg acgggagtgt tcaccacacg cgtgtacatg g
W--> 44
E--> 45      gaagtcatga agtaaatggg acatggatga      2160tccacacctt ggaggcatta gattacaagg agt
W--> 46
E--> 47      atccctgga tacaaggttc agacgaacgg accttggatg caggtaccac      2340tagaagtgaa gagag
W--> 48      2460gccgctcctg cacaatgccg cctgtgagct tccatggtag tgatgggtgt tggatatcca
E--> 49      atagcaatg gaagtggctc      2640taaggaaaag acagggacca aagcaaatgt tggttggagg agtag
W--> 50
E--> 51      ggagacg ccatgtatat ggcgttgatt gctgcctttt      2820caatcagacc agggctgctc atcggct
W--> 52
E--> 53      tggaa gtatctaaat gcagtttctc tctgcctcct gacaataaat gctgttgctt      3000ctaggaaag
W--> 54
E--> 55      cttcacc      3120agaatttcaa ggacacctcc atgcagaaga ctatacctct ggtggcctc acactca
W--> 56
E--> 57      gcagc agctggctta gtgggagtgc      3300tggcaggact ggcttttcag gagatggaga acttccttg
W--> 58
E--> 59      gag gaggcggaga tcagcgggag ttccgcccgc tatgatgtgg      3480cactcagtga acaaggggag
E--> 60      00tccttgctgg gtggctgttt catgtcaggg gagctaggag aagtggggat gtcttgctgg      3660at
W--> 61
E--> 62      gca caggggaggg      3780tgttccacac aatgtggcat gtcacaagag gagctttcct tgtcaggaat
W--> 63
E--> 64      g tccagttgat cgcggctgtt ccaggaaaga      3960acgtggtcaa cgtccagaca aaaccgagct tg
W--> 65
E--> 66      tgggctgtac ggcaatggca tccttgctcg tgacaactcc ttcgtgtccg      4140ccatatccca gact
W--> 67
E--> 68      c      4260gtttcctccc acagatcttg gccgagtgcg cacggagacg cttgcgcact cttgtgttgg
W--> 69
E--> 70      agtcattgat gccatgtgcc      4440atgccaccct aacttacagg atgttggaaac caactagggt tggt
W--> 71
E--> 72      tgcaacaa tcttgatgac agccacaccg cctgggacta      4620tgatgaatt tccacattca aatggt
W--> 73
E--> 74      atccat cagagctgca aatgtcatgg ctgcctcttt gcgtaaggct ggaaagagt      4800tggtggtc
W--> 75
E--> 76      ggagcgag      4920tgctggattg caggacggct ttttaagcctg tgcttggtga tgaaggagg aaggtg
W--> 77
E--> 78      ttctga gcctacaagt gaaaataatg      5100cccaccacgt ctgctggttg gaggcctcaa tgctcttg
W--> 79
E--> 80      ccag aggaaagtct tcagagaact agtgaggaat tgtgacctgc      5280ccgtttggct ttcgtggcaa
E--> 81      400gggctcctgg aggagcaaag aagcctctgc gcccaagggt gtgtgatgaa aggggtgcat      5460c
W--> 82
E--> 83      aggt ggagaggcaa      5580tgataccat cagtgtgttc ctccactctg aggaaggctc tagggcttac
W--> 84
E--> 85      tc ccaaaggcat cagtagaatg tctatggcga      5760tgggcacaat ggccggctgt ggatatctca t
W--> 86
E--> 87      catccaagac aaccaagtgg catacctcat tattggcatc ctgacgtgg      5940tttcagcggg ggc
W--> 88
E--> 89      ga      6060agccaggagc tgctggaca gtgtacgttg gcattgttac aatgctctct ccaatgttg

```

PAGE: 3

RAW SEQUENCE LISTING
 PATENT APPLICATION US/09/121,587

DATE: 04/12/1999
 TIME: 11:11:44

Input Set: I121587.RAW

```

W--> 90
E--> 91      gatgaatatc tcggtcataa      6240tgctgctggt cagtggctgg aattcaataa cagtgatgcc tct
W--> 92
E--> 93      gcgttgcca agaaccctgt ggttgatggg aatccaacag      6420ttgacattga ggaagctcct gaaat
W--> 94
E--> 95      gcattgt cctagcatca gctgccttag ggccgctcat agagggaaac accagccttc      6600tttgaa
W--> 96
E--> 97      gcgcgaatg      6720gaaaaacttt gggatgaagtc tggaagaggg aactgaatct gttggacaag cgaca
W--> 98
E--> 99      ccagggg gaccgcaaag ttaaggtggt      6900tccatgagcg tggctatgtc aagctggaag gtagggg
W--> 100
E--> 101     atgag aaacccatga atgtgcaaag tctgggatgg aacatcatca      7080ccttcaagga caaaactga
W--> 102     7200ttgatactgt agaaaaatgg ctggcttggt gggttgacaa cttctgtgtg aaggtgtag      7260
E--> 103     actac gtgtctggag      7380cccgcagcaa tgtcacattt actgtgaacc aaacatccc cctctgat
W--> 104
E--> 105     aca aagaggccat agaagaaagg gttgagagga      7560taaaatctga gtacatgacc tcttggtttt
W--> 106
E--> 107     t tctgacatat ccatgggaca ggatagagga ggtcacaaga atggcaatga      7740ctgacacaac cc
W--> 108
E--> 109     gcc      7860acctggccag agaaaagaac cccagactgt gcacaaagga agaatttatt gcaaaagtcc
W--> 110
E--> 111     a agaaaggaag ctgcaccaac      8040aaggcaggtg tcggacttgt gtgtacaaca tgatggggaa aa
W--> 112
E--> 113     ttcctgaatg aggaccattg ggcttccagg gaaaactcag      8220gaggaggagt ggaaggcatt ggct
W--> 114
E--> 115     gcagacct tgatgatgaa caggagatct tgaactacat gagcccacat cacaaaaaac      8400tggcac
W--> 116
E--> 117     ggatccgggc      8520aggtagtgac ttatgctctg aacaccatca ccaacttgaa agtccaattg atca
W--> 118
E--> 119     tgtgacag actgaagagg atggcgggtga      8700gtggagacga ctgtgtggtc cggcccatcg atgaca
W--> 120
E--> 121     gtgccc ttctgttccc accacttcca tgaactacag ctgaaggatg      8880gcaggaggat tgtggtgc
W--> 122     9000tgtgggtcact gatgtatttt cacaaaaggg acatgaggct actgtcattg gctgtttcct      906
E--> 123     gtatgg ataaccaaca      9180accacacat gcaggacaag acaatgggtg aaaaatggag agatgtcc
W--> 124
E--> 125     atcc gaacgctgat tggacaggag aaatacactg      9360actacctaac agtcatggac aggtattctg
W--> 126
E--> 127     ct gaaaccggga tataaaccac ggctggagaa cggggctccg cacttaaaat      9540gaaacagaaa c
W--> 128
E--> 129     gtgc      9660aggctgggac agccgacctc caggttgca aaaacctggt ttctgggacc tcccacccca
W--> 130
E--> 131     ga ccatattgac gccagggaaa      9840gaccggagtg gttctctgct ttctctccag aggtctgtga g
W--> 132
E--> 133     acaagagaaa gggaaaagtc ttttgtttaa aacagaggat      10020ggcgtgaaca tgtgcaccct cat
W--> 134
E--> 135     ccacgtcca cgtgggtaac ctatgggact tgtaccacca cgggagaaca tagaagagaa      10200aaaag
W--> 136
E--> 137     gatcctgaga      10320catccaggct tcaccataat ggcagcaatc ctggcataca ccatagggac gac
W--> 138
E--> 139     gggtttcag gaggaagctg ggttgacata      10500gtcttagaac atggaagctg tgtgacgacg atggc

```


PAGE: 4

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/121,587

DATE: 04/12/1999

TIME: 11:11:44

Input Set: I121587.RAW

```
W--> 140
E--> 141      caacaac agaatctcgt tgcccaacac aagggaacc cagcctaaat 10680gaagagcagg ataaaag
W--> 142      10800aacatggagg gaaaagttgt gcagccagaa aacttggaat acaccattgt ggtaacaccc 108
E--> 143      atggcac tgtcacgatg 10980gagtgtcttc cgagaacagg cctcgacttc aatgagatgg tgttgct
W--> 144
E--> 145      taaaa aaagaaacat tggtcacttt caaaaatcct 11160catgcgaaga aacaggatgt tgttgtttt
W--> 146
E--> 147      ggc tgagaatgga caagctacag ctcaaaggaa tgtcatactc tatgtgcaca 11340ggaaagtta
W--> 148
E--> 149      tggaa 11460aaaagacatg tcttaggtcg cctgatcaca gtcaacccaa ttgtgacaga aaaagatag
W--> 150
E--> 151      gtt ctatcgcca aatgtttgag 11640acaacaatga ggggggcgaa gagaatggcc attttgggtg
W--> 152
E--> 153      g ggtctcatgg actatgaaaa tcctcatagg agtcattatc 11820acatggatag gaatgaattc ac
```